REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-23 are pending in the present application. Claims 1, 2, 4, and 10 have been amended without adding new matter, Claims 21-23 have been added without adding new matter, and Claims 11-20 have been withdrawn. Support for the amendments to Claims 1, 4, and 10 is found in Figs. 1 and 7, for example, and no new matter is added. Furthermore, Claims 1, 2, 4, and 10 are amended to better conform to accepted U.S. claim drafting practice. Support for new Claim 21 is founding in Claim 1, for example. Support for new Claim 22 is found in the Specification at page 26, for example. Support for new claim 23 is found in Figs. 1 and 7, for example. Therefore, the new claims do not add new matter.

In the outstanding Office Action, Claim 4 was rejected under 35 U.S.C. §112, second paragraph; Claims 1-10 were rejected under 35 U.S.C. §102(b) as anticipated by Akiyama et al. (U.S. Patent No. 4,391,511, hereinafter Akiyama); and Claims 1-8, 9, and 10 were rejected under 35 U.S.C. §103(a) as unpatentable over Sandstrom (U.S. Patent No. 6,529,266) in view of Sakai et al. (U.S. Patent No. 4, 737,824).

Applicants thank the Examiner for the courtesy of an interview extended to Applicants' representatives on March 7, 2005. During the interview, differences between the present invention and the applied art, and the rejections noted in the outstanding Office Action were discussed. The Examiner acknowledged that that the claim amendments presented during the interview appeared to overcome the prior art rejections and the rejection under 35 U.S.C. §112, second paragraph. However, no agreement as to allowability was reached as the amended form of the claims required further searching. Arguments presented during the interview are reiterated below.

In response to the rejection of Claim 4 under 35 U.S.C. §112, Claim 4 is amended to more clearly describe and distinctly claim the subject matter Applicants regard as the invention. It is respectfully submitted that amended Claim 4 complies with the requirements of 35 U.S.C. §112, second paragraph.

With respect to the rejection of Claim 1 as anticipated by Akiyama under 35 U.S.C. §102(b), Applicants respectfully submit that the amendment to Claim 1 overcomes the rejection.

Claim 1 is directed to an exposure device exposing an exposure pattern to a substrate, including: detecting means for detecting undulation or thickness unevenness in a first direction on a surface of a substrate; retaining means for supporting the substrate, the retaining means including, support mechanisms configured to be elongated in a second direction orthogonal to the first direction of the undulation or thickness unevenness detected by the detecting means, the support mechanisms configured to be arranged in the first direction of the undulation or thickness unevenness, and support mechanism adsorbing plates configured to be independently displaced in a third direction of displacement orthogonal to a surface of the substrate and along the first direction, the surface of the substrate extending in the first and second directions; and a plurality of adsorbing means for adsorbing and retaining the substrate provided on the retaining means of the support mechanisms along a length direction of the support mechanisms.

Claim 1 is amended to recite "detecting means for detecting undulation or thickness unevenness in a first direction on a surface of a substrate." Akiyama does not teach or suggest this element of Claim 1.

Akiyama describes a light exposure device that measures the curvature of a semiconductor wafer.[1] On the semiconductor wafer, thickness unevenness is generated

[1] Akiyama, col. 4, lines 1-3.

radially from the center of the wafer. Figs. 2a and 5 of Akiyama show that the displacement of the thickness of the wafer is simply thinner at the peripheral portion thereof. The detecting means 37 does not detect thickness unevenness in the claimed first direction on a surface of a substrate. Rather, the detecting means 37 detects thickness unevenness in all radial directions. Therefore, Akiyama does not teach or suggest the claimed "detecting means for detecting undulation or thickness unevenness in a first direction on a surface of a substrate."

Amended Claim 1 also recites "support mechanisms configured to be elongated in a second direction orthogonal to the first direction of the undulation or thickness unevenness detected by the detecting means." Akiyama does not teach or suggest this element of Claim 1.

Akiyama describes restricting the unevenness of the substrate surface to be exposed within the depth of focus (DOF) by adjusting the air pressure in the air gap formed between the wafer and the support substrate, or by vertically moving the block which supports the wafer.[2] Akiyama further describes that a vacuum source is activated to draw and hold the wafer to the chuck surface, and that the stage is raised to level the wafer. Akiyama does not teach or suggest support mechanisms configured to be elongated in the second direction orthogonal to the first direction.

Furthermore, the Office Action relies on motor 33, gear 34, and block 35 as teaching the claimed "support mechanisms."[3] However, neither the motor 33, gear 34, nor block 35 are described by Akiyama as being elongated. Akiyama only describes that the motor and gear are used to move the block up or down.[4] Therefore, Akiyama does not teach or suggest the claimed "support mechanisms configured to be elongated in a second direction orthogonal

[2] Akiyama, col. 8, lines 29-54.
[3] Office Action, December 10, 2004, page 4.
[4] Akiyama, col. 6, lines 20-25.

to the first direction of the undulation or thickness unevenness detected by the detecting means."

In view of the above noted-distinctions, Applicants respectfully submit that amended Claim 1 (and Claims 2-9 that depend from Claim 1) patentably distinguish over Akiyama. Applicants also respectfully submit that amended Claim 10 patentably distinguishes over Akiyama for at least the same reasons given for amended Claim 1.

With respect to the rejection under 35 U.S.C. §103(a), Applicants respectfully traverse the rejection because the outstanding Office Action fails to provide a *prima facie* case of obviousness by asserting prior art that, no matter how the prior art references are combined, does not teach every limitation of independent Claims 1 and 10, as amended.

To establish a *prima facie* case of obviousness, M.P.E.P. §2143 requires that three criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the references teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim elements.

Amended Claim 1 recites "detecting means for detecting undulation or thickness unevenness each extending in a first direction on a surface of a substrate." Applicants agree with the Office Action that that Sandstrom does not teach or suggest the claimed "detecting means."[5] Furthermore, Sakai does not cure the deficiency in Sandstrom.

Sakai describes a flatness measuring device that detects flatness of the surface of a semiconductor wafer.[6] On the semiconductor wafer, unevenness is generated radially from the center. Sakai describes detecting thickness unevenness in all radial directions, and not in the claimed first direction. Therefore, Sakai does not teach or suggest "detecting means for

[5] Office Action, December 10, 2004, page 6.
[6] Sakai, col. 3, lines 41-43, and col. 4, line 26.

detecting undulation or thickness unevenness each extending in a first direction on a surface of a substrate" as recited in Claim 1.

Claim 1 also recites "support mechanisms configured to be elongated in a second direction orthogonal to the first direction of the undulation or thickness unevenness detected by the detecting means." It is respectfully submitted that neither Sandstrom nor Sakai teach or suggest this element of amended Claim 1.

The outstanding Office Action relies on Sandstrom to describe the claimed "support mechanisms."[7] However, Sandstrom only describes an object table 19 and spacer elements 100. The spacer elements function to hold the substrate in a horizontal position and prevent vertical movement of the substrate relative to the object table. Sandstrom describes the spacer elements as being some sort of adhesives, electromagnets, suction cups or vacuum cups.[8] Thus, Sandstrom does not teach or suggest the claimed "support mechanisms configured to be elongated in a second direction orthogonal to the first direction of the undulation or thickness unevenness detected by the detecting means."

Applicants respectfully submit that Sakai does not cure the above-noted deficiency in Sandstrom. Sakai only describes that chuck base 2 has an upwardly extending annular support 2a.[9] Neither chuck base 2 nor annular support 2a are described as being configured to be elongated. Thus, Sakai does not teach or suggest the claimed "support mechanisms configured to be elongated in a second direction orthogonal to the first direction of the undulation or thickness unevenness detected by the detecting means."

In view of the above-noted distinctions, Applicants respectfully submit that amended Claim 1 (and dependent Claims 2-8 that depend from Claim 1) patentably distinguish over the combination of Sandstrom and Sakai. Applicants respectfully submit that amended Claim

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[7] Office Action, December 10, 2004, page5.
[8] Sanadstrom, col. 3, lines 53-57.
[9] Sakai, col. 2, lines 67-68.

10 and new Claims 21-23 patentably distinguishes over the combination of Sandstrom and Sakai for at least the reasons given for amended Claim 1.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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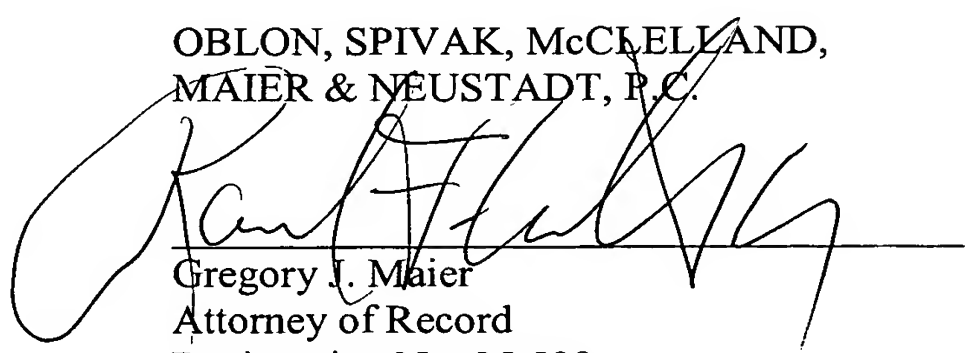

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